

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Friedrich Bock  
Appln. No. : 10/775,956  
Filed : February 10, 2004  
Title : REAL-EAR ZOOM HEARING DEVICE

Conf. No. : 1611  
TC/A.U. : 3736  
Examiner : TBD

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Customer No. : 000,116  
Docket No. : 36443

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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**PETITION TO MAKE SPECIAL**  
**AND**  
**STATEMENT & DISCUSSION REGARDING PREEXAMINATION SEARCH**  
**AND MOST RELEVANT UNCOVERED REFERENCES IN SUPPORT**

Sir:

Applicant hereby submits this Petition to Make Special to request an Acceleration of the Examination of this application, under 37 CFR § 1.102(d) according to MPEP §708.02(VIII). A check in the amount of \$130.00 for the petition fee under 37 CFR § 1.17(h) is enclosed, and Applicant provides the attached Statement and Discussion. Note that copies of cited U.S. references were not included, according to current practice, but are listed on the enclosed IDS.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.	
<u>Robert P. Bodi</u> Name of Attorney for Applicant(s)	
<u>[Signature]</u> Signature of Attorney	<u>October 11, 2005</u> Date

Page 1 of 4

The PTO did not receive the following  
listed item(s) No check

**STATEMENT & DISCUSSION REGARDING PREEXAMINATION SEARCH,  
AND MOST RELEVANT UNCOVERED REFERENCES IN SUPPORT**

**PREEXAMINATION SEARCH**

A preexamination search was conducted in compliance with MPEP §708.02, VIII. Special Examining Procedure For Certain New Applications – Accelerated Examination.

An initial search by the European Patent Office of the co-pending application, EP 1443798 A3, is attached hereto. Attached hereto is European Publication No. EP 1443798 A2, which was also examined in the above search. Note that the independent claim of the EPO application is essentially identical to the claim of the subject U.S. application. The EPO search identified two A references, one of which was also a D reference. Accordingly, the European Search report did not identify any references relevant to the patentability of the claims of this application.

A second search of U.S. patents and patent applications, conducted by the undersigned attorney on June 16, 2005 and updated on September 13, 2005, covered the following USPTO Patent Classifications:

Class 381, Electrical audio signal processing systems and devices, was searched via the following subclasses:

The following subclasses of subclass 312: HEARING AIDS, ELECTRICAL, were searched in detail:

- Subclass 313: Directional (181 references reviewed); and
- Subclass 322: Specified casing or housing; subclass 330: Hook over ear (217 references reviewed);

Subclass 92: DIRECTIVE CIRCUITS FOR MICROPHONES was searched restricted to those references having the keywords "hearing aid" or the phrase "hearing device". (69 references reviewed)

The following subclasses of class 367: COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEMS AND DEVICES, subclass 118: DISTANCE OR DIRECTION FINDING, were searched with the search restricted to patents that were either also classified in class 381, or patents that contained either the phrase "hearing aid" or the phrase "hearing device" (35 references reviewed):

- Subclass 119: With beam forming, scanning, or focusing, subclass 121: By electrical means;
- Subclass 124: By combining or comparing signals; further, the following subclasses of subclass 124 were also searched:
  - Subclass 125: Phase comparison and/or correlation;
  - Subclass 126: Addition or subtraction;
- Subclass 129: With plurality of transducers

#### DISCUSSION OF MOST RELEVANT REFERENCE(S)

Each of the enclosed references is cited in the IDS. However, the party reviewing the search has determined that none of the uncovered references are relevant to the subject invention, for the reasons set out below.

The present invention, as set forth in claim 1, the only independent claim, is directed to a behind the ear hearing device having at least two microphones for detecting acoustical signals and a beam former unit having transfer characteristics of amplification that are dependent on both "the direction with which said acoustical signals impinge on said microphones" (lines 18–20) and on the "frequency of said acoustic signals" (lines 20–21) with the beam former having the following features:

a substantially constant amplification independent of said direction of impinging at said frequency of 1 kHz,

and

For said direction being 45° [with 0° being the direction faced by an individual wearing the device and 90° outwards from the ear of the user], a larger amplification than for said direction being 135° at said frequency of 5 kHz.

None of the references listed above teach or suggest any beam former unit having the cited characteristics.

It is noted that a number of references cited in the IDS teach the use of multiple microphones to form directional characteristics that are of the cardioid, hyper-cardioid, or some similar pattern. See, for example, U.S. Pat. Nos. 5, 473,701 (Fig. 2), and U.S. Pat. App. No. 2003/0142836 (Figs. 4–9). However, no reference suggested directivity where amplification at 45° would differ from amplification at 135° at one frequency, but not at another.

Furthermore, at least one reference taught that microphone sensitivity may vary as a function of frequency. See, for example, U.S. Pat. App. No. 2003/0142836 (Fig. 11). Another reference taught that signal processing can also result in frequency sensitivity. See U.S. Pat. App. No. 2005/0058312 (where it is discussed that filtering and/or pre-processing might be used to compensate for frequency differences, see paragraph [0030]).

However, no reference was found that taught anything similar to the characteristics cited above, namely that at 1kHz, there would be no directivity impact on amplification, whereas at 5kHz, there would be a larger amplification for signals impinging at 45° than at 135°. This teaching is not found in any of the cited references. Thus, claim 1 is patentable over the prior art searched.

The remaining claims are dependent, directly or indirectly, on one of the independent claims discussed above, and are thus patentable over the references based on that dependency.

Accordingly, because all of the relevant classes have been searched without finding any relevant references, and because a search in the European Patent Office has similarly found no relevant references, the claims are patentable over the prior art.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 34835.

Respectfully submitted,  
PEARNE & GORDON LLP

By: \_\_\_\_\_  
Robert F. Bodi – Reg. No. 48,540

1801 East 9th Street  
Suite 1200  
Cleveland, Ohio 44114-3108  
(216) 579-1700

Date: October 11, 2005

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Appln. No. : 10/775,956  
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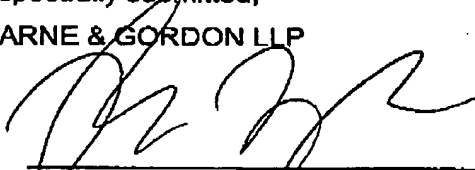
**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with Rule 56, Applicant is aware of the publications listed on the enclosed Form PTO/SB/08A. A copy of each listed U.S. patent or patent publication is not being submitted herewith. Copies of all other cited publications are enclosed herewith.

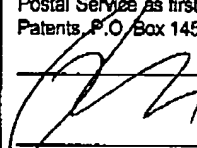
If any further fees are required by this communication, please charge such fees to our Deposit Account No. 16-0820, Order No. 36443.

Respectfully submitted,  
PEARNE & GORDON LLP

By:   
Robert F. Bodi - Reg. No. 48,540

1801 East 9th Street  
Suite 1200  
Cleveland, Ohio 44114-3108  
(216) 579-1700

Date: October 11, 2005

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.	
 Robert F. Bodi Name of Attorney for Applicant(s)	October 11, 2005 Date

PTO/SB/08A (07-06)

Approved for use through 07/31/2008. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

**Complete if Known**

Application Number	10/775,956
Filing Date	February 10, 2004
First Named Inventor	Friedrich Bock
Art Unit	3736
Examiner Name	TBD
Attorney Docket Number	36443

Sheet 1 of 1

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 4,198,705	04-15-1980	Massa	
		US- 5,473,701	12-05-1995	Cezanne et al.	
		US- 5,581,620	12-03-1996	Brandstein et al.	
		US- 5,825,898	10-20-1998	Marash	
		US- 6,178,248 B1	01-23-2001	Marash	
		US- 2001/0031053 A1	10-18-2001	Feng et al.	
		US- 2003/0142836 A1	07-31-2003	Warren et al.	
		US- 2005/0058312 A1	03-17-2005	Weidner	
		US- 2005/0094834 A1	05-05-2005	Chalupper	
		US- 2005/0105749 A1	05-19-2005	Niederdrank et al.	
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**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		WO 99/09786 A1	02-25-1999	Maisano et al.		

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.18 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-785-9199) and select option 2.

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1801 East 9th, Suite 1200  
CLEVELAND, OHIO 44114-3108  
(216) 579-1700

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Name of Sender Michael W. Garvey

## COMMENTS

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RE:   Applicant       :     Friedrich Bock  
      Serial No.     :     10/775,956  
      Filed          :     February 10, 2004  
      Title          :     "REAL-EAR ZOOM HEARING DEVICE"  
      Docket No.    :     36443

STATUS INQUIRY

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Friedrich Bock  
Appln. No. : 10/775,956  
Filed : February 10, 2004  
Title : REAL-EAR ZOOM HEARING DEVICE

TC/A.U. : 2646  
Examiner : Dionne Pendleton

Customer No. : 000,116  
Docket No. : 36443

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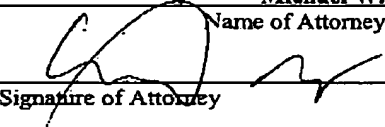
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P.O. Box 1450  
Alexandria, VA 22313-1450

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Sir:

Applicant respectfully inquires as to the status of the above-identified application. The application was filed February 10, 2004 and applicant's attorney has not received an Examiner's communication from the Patent Office since that filing date.

Also on October 11, 2005, applicant submitted a "Petition To Make Special And Statement & Discussion Regarding Preexamination Search And Most Relevant Uncovered References In Support," as well as an Information Disclosure Statement to be filed in the above-referenced patent application. A recent search of PAIR does not show these two submissions as being entered into the file history of this case.

I hereby certify that this correspondence is being transmitted by facsimile to the Commissioner for Patents, Washington D.C. 20231 on the date indicated below.	
<u>Michael W. Garvey</u>	
Name of Attorney for Applicant(s)	
	<u>21 Feb 06</u>
Signature of Attorney	Date



Enclosed is a copy of the above-mentioned submitted petition and IDS, as well as a copy of the return postcard showing receipt of the documents by the PTO on October, 13, 2005.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 36443.

Respectfully submitted,

PEARNE & GORDON LLP

By: 

Michael W. Garvey, Reg. No. 35878

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Date: 21 Feb 06

Express Mail: \_\_\_\_\_ No. 07662  
Inventor / Applicant: Friedrich Bock  
Title: REAL-EAR ZOOM HEARING DEVICE  
Serial No. 10/775,956 Patent No. \_\_\_\_\_ Date: \_\_\_\_\_  
Filed: 2-10-2004 Examiner: \_\_\_\_\_  
Enclosed Are:  
☐ PATENT APPLICATION  
\_\_\_\_ New Application Transmittal  
\_\_\_\_ Fee Transmittal (in duplicate)  
\_\_\_\_ Application Data Sheet  
\_\_\_\_ Declaration & Power Of Attorney  
\_\_\_\_ Pgs. of Claims  
\_\_\_\_ Sheet(s) of Drawing(s)  
\_\_\_\_ Formal \_\_\_\_\_ Informal  
\_\_\_\_ Continuation or Division  
☐ ASSIGNMENT \_\_\_\_\_ pgs.  
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☐ AMENDMENT \_\_\_\_\_  
in Response to Paper No. \_\_\_\_\_

**OTPE**  
**OCT 13 2005**  
**UNITED STATES PATENT & TRADEMARK OFFICE**

Priority Documents \_\_\_\_\_ listed below  
Other Petition to Make Special -  
4 pages  
Attachments - 2  
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